

# Rhodora

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# Rhodora

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## A NEW LOCALITY FOR *SENECIO CRAWFORDII*.<sup>1</sup>

PAUL C. STANDLEY.

OF the comparatively few species of *Senecio* native to the eastern United States, one of the rarest or, at least, most local in its distribution is *S. Crawfordii* Britton, which was described in 1901 from specimens collected near Philadelphia. In Gray's New Manual Dr. J. M. Greenman treated the plant as a variety of *S. Balsamitae* Muhl. (= *S. pauperculus* Michx.), but in his recent monograph of the genus <sup>1</sup> he has accorded it specific rank. Such a treatment it seems to merit, certainly as much as *S. Smallii* Britton, which is recognized as a species in Gray's Manual, although to the writer the differences which separate it from *S. pauperculus* seem very slight.

The specimens of *S. Crawfordii* cited by Greenman in his monograph, most of them in the herbarium of the Philadelphia Academy of Sciences, are all from southeastern Pennsylvania and western New Jersey. Consequently it may be of interest to record an additional locality for the species, considerably removed from its previously known range. On May 25, 1917, Mr. William R. Maxon obtained in a bog near Suitland, Maryland, a few miles east of Washington, specimens of a *Senecio* which was evidently new to our local flora. It was obviously a relative of *S. Smallii* although conspicuously different in its bright green, very succulent, and comparatively short and broad basal leaves. The writer identified it as *S. Crawfordii*, and the identification was later confirmed by Mr. Bayard Long, after

<sup>1</sup> Published by permission of the Secretary of the Smithsonian Institution.

<sup>2</sup> Ann. Mo. Bot. Gard. iii. 139 (1916).



comparison with the ample material at Philadelphia. On May 12, 1918, Mr. Edgar Brown, Prof. A. S. Hitchcock, Mr. Maxon, and the writer visited the Suitland bog and found the plant growing in some abundance. It was not very conspicuous, however, for the plants were scattered and half hidden among tufts of withered grass.

The two other species of *Senecio* common about Washington are found in quite different habitats. *S. aureus* is frequent along streams and in wet soil generally in the hilly Piedmont Region westward, especially along the valley of the Potomac. *S. Smallii*, also, occurs in the same general region, but in dry, elevated situations. *S. Crawfordii*, on the other hand, occurs in one of the characteristic white gravel or magnolia bogs of the low Coastal Plain.

These bogs are the most interesting feature of our local flora.<sup>1</sup> They are small, hardly more than a few yards across, and lie always upon a gentle slope, usually surrounded by a thick growth of trees and shrubs, a circumstance which often makes their discovery difficult. The necessary condition for their occurrence is a thin bed of gravel or coarse sand, commonly about a foot thick, lying between two beds of clay. On a hillside where the gravel is exposed the water which flows through the subterranean gravel stratum trickles over the bed and keeps it constantly wet, even in the driest seasons. Such bogs are very pleasant botanizing grounds, for here one may wander about nearly dry-shod among a host of interesting bog plants which usually grow in much less comfortably accessible places. A number of the bogs are known in the Coastal Plain region north and east of Washington, and there are probably others still undiscovered in the less explored portions of our area. They are our only stations for a number of interesting species, most of which are characteristic pine-barren plants. The bog near Suitland is in some respects the most interesting of all, for it has yielded several species not found in the others within our limits,<sup>2</sup> such as *Carex Collinsii*, *Habenaria cristata*, *Polygala lutea*, and *Arethusa bulbosa*. The last species was reported from our region about 80 years ago, but had not been recollected until we discovered it near Suitland at the same time that we collected the *Senecio*:

<sup>1</sup> See W. L. McAtee. A sketch of the natural history of the District of Columbia. Bull. Biol. Soc. Washington i. 74-90 (1918). McAtee gives a very full and interesting account of the magnolia bogs, and an equally instructive discussion of the other phytogeographic features of the District and vicinity.

<sup>2</sup> The area included in the District flora region, as usually limited, is a circle of 15 miles radius, the Capitol being taken as the center.

The gravel bed, which is the essential feature of these bogs, is bare in spots, but is largely covered by patches of sphagnum and scattered clumps of *Cladonia*, among which grow various herbaceous plants of higher groups. The bog is essentially open, but shrubs are banked about its edge and form occasional clumps over its surface. The shrubs or small trees are chiefly *Alnus rugosa*, *Myrica carolinensis*, *Itea virginica*, *Aronia atropurpurea*, *Amelanchier oblongifolia*, *Rhus vernix*, *Ilex laevigata*, *Acer rubrum*, *Nyssa sylvatica*, *Azalea viscosa*, *Eubotrys racemosa*, *Kalmia angustifolia*, *Gaylussacia dumosa*, *Vaccinium atrococcum* and *V. corymbosum*, *Chionanthus virginica*, and *Viburnum nudum* and *V. cassinoides*. The swamp magnolia is present in all the bogs, and it is because of this fact that McAtee has proposed for them the term "magnolia bogs." The more characteristic or interesting herbaceous plants are *Osmunda cinnamomea*, *Lycopodium adpressum* and *L. carolinianum*, *Panicum lucidum*, *Eriocaulon decangulare*, *Xyris caroliniana*, *Tofieldia racemosa*, *Melanthium angustifolium*, *Limodorum tuberosum*, *Pogonia ophioglossoides*, *Drosera rotundifolia*, *Polygala lutea* and *P. cruciata*, *Triadenum virginicum*, *Rhexia virginica*, *Orypolis rigidior*, *Utricularia subulata*, and *Helianthus angustifolius*.

It will be seen that most of the plants enumerated are characteristic species of the pine-barrens which, in the northeastern states, attain their best development in New Jersey. Notwithstanding the presence of so many species characteristic of that type of vegetation, no pine-barrens exist in our region. The isolated occurrence of such a large percentage of pine-barren species (it is estimated that 70 per cent of the typical ones occur in Delaware and eastern Maryland) is explained by McAtee as having probably resulted from the depression of the Coastal Plain. It is assumed that formerly a belt of the pine-barren flora extended along much of the Atlantic coast, but that when the Coastal region was depressed most of the vegetation of this type was destroyed. Isolated colonies of plants were able to maintain their existence in favorable spots near or upon the Piedmont Plateau, and although conditions in such situations were generally unsuited to the growth of pine-barren plants, some of them have managed to persist in places where conditions were particularly propitious, as, for instance, in these magnolia bogs.

It may be noted in concluding that although *Senecio Crawfordii* is found with us in association with pine-barren species, it appears



to occur in a different habitat in Pennsylvania and New Jersey. Stone<sup>1</sup> reports it from "Damp meadows or bogs in the Middle district, near the Delaware River, local and not common."

U. S. NATIONAL MUSEUM, Washington, D. C.

## TWO NEW MYRIOPHYLLUMS AND A SPECIES NEW TO THE UNITED STATES.

M. L. FERNALD.

**MYRIOPHYLLUM exalbescens**, n. sp., herba aquatica, caule glaberrimo folioso simpliciter vel ramoso purpureo in statu exsiccato exalbescens; foliis verticillatis raro 3<sup>nis</sup> plerumque 4<sup>nis</sup> 1.2-3 cm. longis, segmentis 7-11-jugis capillaceis flaccidis vix subrigidis 0.5-3 cm. longis; spicis terminalibus subnudis, floribus verticillatis inferioribus foemineis superioribus masculis sessilibus; bracteis fructum rare aequantibus spatulato-obovatis vel oblongo-cochleiformibus inferioribus serratis superioribus integris; bracteolis ovatis integris brunneo-marginatis 0.7-1 mm. longis; petalis oblongo-obovatis concavis 2.5 mm. longis; staminibus 8, antheris oblongis 1.2-1.8 mm. longis; fructibus subglobosis angustissime 4-sulcatis 2.3-3 mm. longis, merocarpiis dorso rotundatis laevibus vel rugulosis.

Aquatic herb; the stem glabrous, leafy, simple or branching, purple, in the dried state becoming white: leaves verticillate, rarely in 3's, commonly in 4's, 1.2-3 cm. long, with 7-11 pairs of capillary flaccid or barely a little rigid segments: spikes terminal, almost naked, the flowers verticillate; the lower pistillate, the upper staminate, sessile: bracts rarely equalling the fruit, spatulate-obovate or oblong-cochleiform; the lower serrate, the upper entire: bracteoles ovate, entire, brown-margined, 0.7-1 mm. long: petals oblong-obovate, concave, 2.5 mm. long: stamens 8; anthers oblong, 1.2-1.8 mm. long: fruits subglobose, very slenderly 4-sulcate, 2.3-3 mm. long; the merocarps rounded on the back, smooth or rugulose.—Ponds, pools and quiet streams, often brackish or calcareous, Greenland and Labrador to Washington, south to western Newfoundland, Cape Breton, southern New Brunswick, southern New England, southeastern, central and western New York, the Great Lake region, Kansas, Arizona and southern California. GREENLAND: Ikerasak, July 19, 1892, *Vandhöffen*. LABRADOR: shallow sandy-bottomed

<sup>1</sup> Plants of southern New Jersey 777 (1911).

pools, Blanc Sablon River, August 4, 1910, *Fernald & Wiegand*, no. 3,753. NEWFOUNDLAND: pools in limestone barrens, Pointe Riche, August 4, 1910, *Fernald & Wiegand*, no. 3,754. MAGDALEN ISLANDS: shallow pools among the sand ridges between East Cape and East Point, Coffin Island, *Fernald, Bartram, Long & St. John*, no. 7,842. QUEBEC: shallow pond, Longue Pointe, Brest, July 31, 1915, *St. John*, nos. 90,616, 90,617; brackish pools and dead waters near the mouth of Dartmouth River, August 26 and 27, 1904, *Collins, Fernald & Pease*; York River, July 29, 1905, *Williams, Collins & Fernald* (TYPE in Gray Herb.). PRINCE EDWARD ISLAND: shallow pools in *Thuja* swamps, Tignish, August 6, 1912, *Fernald, Long & St. John*, no. 7,840; Black Pond, July 28, 1912, *Fernald, Bartram, Long & St. John*, no. 7,841. NOVA SCOTIA: lake at Bay St. Lawrence, Cape Breton, August 12, 1904, *J. R. Churchill*. MAINE: near margins of lakes in 3–10 feet of water, St. Francis River, August 14, 1902, *Eggleston & Fernald* (*Eggleston*, no. 3,024); quiet pools, St. Croix River, Calais, August 3, 1909, *Fernald*, no. 2,014. VERMONT: Shelburne, July 31, 1894, *A. J. Groul*; Dorset, July 28, 1898, *M. A. Day*. MASSACHUSETTS: Idlewild Lake, Wenham, September 13, 1908, *F. S. Collins*; Mystic Pond, Medford, September 24, 1865, *Wm. Boott*; Fresh Pond, Cambridge, *Faxon et al.*; outlet of Stockbridge Bowl, Stockbridge, August 9, 1914, *Hoffmann*. CONNECTICUT: New Haven, 1857, *D. C. Eaton*; pond near headwaters of Saugatuck River, Danbury, July 21, 1917, *E. H. Eames & C. C. Godfrey*. NEW YORK: Sucker Brook, Lisbon, June 22, 1914, *O. P. Phelps*, no. 717 in part; Elmira, 1859, *E. Tatnall*. ONTARIO: Ottawa River below Britannia, August 21, 1911, *J. Macoun*, no. 85,941; Rideau River, Cummings Bridge, September 7, 1911, *J. Macoun*, no. 85,942; Smith's Falls, July 14, 1898, *J. Fowler*. OHIO: Cedar Point, Erie Co., July 8, 1894, *E. L. Moseley*. MICHIGAN: Lansing, August 18, 1885, *L. H. Bailey*. WISCONSIN: Milwaukee, *I. A. Lapham*; Green Bay near Bars Channel, June 29, 1890, *J. H. Schuette*. ILLINOIS: Fox River, 1862, *Geo. Vasey*; in a peat-bog lake, Lake Villa, Lake Co., August 8, 1906, *Gleason & Shobe*, no. 178 (distributed as *Ceratophyllum demersum*). MINNESOTA: Lake of the Woods, June 26, 1894, *McMillan & Sheldon*, no. 568. NORTH DAKOTA: pools, Leeds, August 5, 1900, *J. Lunell*. SOUTH DAKOTA: Sioux River, Brookings, July 4, 1894, *J. J. Thornber*. NEBRASKA: Swan Lake, Grant Co., August 7, 1893, *Rydberg*, no. 1,651. KANSAS: ponds, Decatur Co., June 26, 1897, *A. S. Hitchcock*, no. 1,083. SASKATCHEWAN: 1858, *Bourgeau*; Crane Lake, June 16, 1894, *J. Macoun*, no. 4,934. MONTANA: Bitterroot Valley near Missoula, August 4, 1880, *S. Watson*, no. 143; Cliff Lake, Madison Co., July 27, 1897, *Rydberg & Bessey*, no. 4,591. WYOMING: Bath Lake, September 8, 1896, *A. Nelson*, no. 2,782; Green River, August 26, 1894, *A. Nelson*, no. 1,038. COLORADO: ponds, Tabeguache Basin, July 21, 1913, *E. Payson*, no. 145; Gunnison, August 16, 1901, *C. F. Baker*, no. 824



(form with remarkably elongate bracts). ARIZONA: Mormon Lake, June 6, 1898, *MacDougal*, no. 75. IDAHO: Pend Oreille River, 1861, *Lyall*; ponds and streams, Falk's Store, Canyon Co., June 28, 1910, *J. F. Macbride*, no. 302. CALIFORNIA: Big Meadows, August, 1879, *Mrs. R. M. Austin*; Presidio, June, 1891, *Michiner & Bioletti*, no. 175; Mountain Lake, San Francisco, June 27, 1892, *J. W. Blankinship*; Bear Valley, San Bernardino Mts., August, 1882, *Parish*, no. 1,433. OREGON: sluggish stream, Malheur Co., June 24, 1898, *Cusick*, no. 1,959. WASHINGTON: Seattle, August, 1892, *Piper*, no. 1,132; Lake Cushman, Mason Co., August, 1895, *Piper*, no. 2,230; Blakeley Island, San Juan Islands, 1917, *S. M. & E. B. Zeller*, no. 1,144 (distributed as *Ceratophyllum demersum*).

*Myriophyllum exalbescentis* has always passed in America as *M. spicatum* L. The latter species of Eurasia, however, differs from the American plant in several characters: the principal leaves of the primary stems have 14-21 pairs of rigid slenderly linear divisions; the bracts are rhombic-obovate; the bractlets are suborbicular or reniform, broader than long, and distinctly shorter than in most of *M. exalbescentis*, 0.5-0.8 mm. long; and the linear anthers tend to be longer, being 1.8-2.2 mm. in length. In *M. exalbescentis*, furthermore, the dried stems very strongly tend to become white, although this change is not always noted; in *M. spicatum*, however, the old herbarium-specimens still retain a fulvous or olivaceous tone in the stems.

On the Magdalen Islands occurs a species of *Myriophyllum* which in foliage and in the whitening of the stem upon drying strongly suggests *M. exalbescentis* but with fruit so very unlike that of the latter species or of the old world *M. spicatum* or of any species known to the writer that it is here proposed as

**MYRIOPHYLLUM magdalense**, n. sp., *M. exalbescentis* simile; caule ramoso in statu exsiccato exalbescente, foliis plerumque 4<sup>nis</sup> 1-2 cm. longis segmentis 3-7-jugis capillaceis flaccidis 0.5-1.3 cm. longis, superioribus emergentibus elongato-oblancoelatis vel linearibus breviter pectinatis vel subintegris; spicis terminalibus rhachi filiformi floribus verticillatis inferioribus foemineis superioribus masculis sessilibus; bracteis elongatis lineari-oblancoelatis conduplicatis apice sursum curvatis integris vel inferioribus pectinatis 0.3-1 cm. longis; bracteolis ovatis 0.6-0.8 mm. longis; petalis ovato-oblongis concavis, 1.5 mm. longis; staminibus 8, antheris oblongis 1.5 mm. longis (immaturis); fructibus subglobosis 3 mm. longis latissime 4-sulcatis, merocarpiis dorso rotundatis rugosis.



Similar to *M. exalbescens*; the stem branching, becoming white when dried: leaves mostly in 4's, 1–2 cm. long, with 3–7 pairs of capillary flaccid segments 0.5–1.3 cm. long; the upper emergent ones elongate-oblancoelate or linear, short-pectinate or subentire: spikes terminal, with the rachis filiform; flowers verticillate, the lower pistillate, the upper staminate, sessile: bracts elongate, linear-oblancoelate, conduplicate, up-curved at the end, entire or the lower pectinate, 0.3–1 cm. long: bractlets ovate, 0.6–0.8 mm. long: petals ovate-oblong, concave, 1.5 mm. long: stamens 8; anthers oblong, 1.5 mm. long (immature); fruits subglobose, 3 mm. long, very broadly 4-sulcate; the merocarps with rounded rugose backs.—MAGDALEN ISLANDS, QUEBEC: shallow ponds among the sand hills between East Cape and East Point, Coffin Island, August 17, 1912, *Fernald, Long & St. John*, no. 7,843 (TYPE in Gray Herb.).

In the whitening of its stem *M. magdalense* simulates *M. exalbescens* from which it differs in the elongate, entire or subentire upper leaves, the elongate bracts, the very short petals and especially in the very broadly and openly sulcate fruits. From *M. spicatum* it differs in the whitening stem, the few capillary and flaccid segments of the leaves, the elongate bracts (sometimes found also in varieties of *M. spicatum*), the ovate bractlets, the short petals and anthers, and in the very characteristic fruit, the fruits of *M. spicatum* being slenderly sulcate as in *M. exalbescens*.

Unfortunately the material of *M. magdalense* is mostly immature, only one plant being found with good fruit. The species filled a single small pond to the exclusion of other species and flowered freely so that a visit in September should yield abundant fruiting material. The *Myriophyllum* of neighboring pools was *M. exalbescens* and in a single station *M. verticillatum*, var. *intermedium* Koch, which apparently has not heretofore been found in North America.

In the Gray Herbarium, among the various species which have been erroneously called by their collectors *Myriophyllum verticillatum* is a sheet from Farewell Bend, Crook Co., Oregon, collected in July, 1894 by J. B. Leiberger (no. 465), which is quite unlike any recognized North American plant. In its very glaucous or blue-green, emersed, broad, entire or variously serrate leaves and the tendency of the inflorescence to fork it is unique among American plants as it is in the very long (2 mm.) slenderly triangular, serrate bractlets. This plant proves to be a well known species of the southern hemisphere,

*M. ELATINOIDES* Gaudichaud, Ann. Sci. Nat. v. 105 (1825) = *M. titikakense* Remy, Ann. Sci. Nat. sér. 3, vi. 352 (1846). *M. elatinoides* is one of that remarkable group of species confined to southern Australia, Tasmania and New Zealand and America but not known in Africa nor Eurasia. Outside the Australian region it has been heretofore known only as a common Andean species, from the Falkland Islands and Tierra del Fuego along the higher Andes to Ecuador. In the *Pflanzenreich* Schindler cites a specimen of Botteri's collected somewhere in Mexico, the station not known. The discovery of this Australian and Andean species in Oregon<sup>1</sup> is, therefore, highly important and particularly striking as adding another to a small group of plants which have followed essentially similar lines of migration. Occasionally these Andean plants are also in eastern America, for instance *Polystichum scopulinum* (D. C. Eaton) Maxon. In writing elsewhere of the distribution of that and its allies the present writer has said: "I refer to *P. mohrioides* and its allies (fig. 17). There are four or five species of this alliance, all plants of the highest degree of localization. *P. mohrioides* and other austral species are known only from the Antarctic Prince Edward Islands, 1,200 miles southeast of the Cape of Good Hope, from the Falkland Islands, Tierra del Fuego, and Patagonia, and as the rarest of isolated species in the Andes. In North America we have two species so close to *P. mohrioides* that some authors have considered them inseparable: *P. Lemmoni*, a famous rare species of the mountains of California, Oregon and Washington; and *P. scopulinum* of similar range, though even rarer, and found with *Pellaea densa* on arid mountain-walls of Gaspé County, Quebec."<sup>2</sup> Now that the Andean *Myriophyllum elatinoides* has been found in Oregon, we may, therefore, watch for it with some confidence in the Gaspé or Newfoundland waters.

Schindler cites in the synonymy of *M. elatinoides*, *M. quitense* HBK. Nov. Gen. et Sp. vi. 89 (1823) and if the identification is confirmed *M. quitense* must be maintained as the earliest name. The description, however, is not satisfactory, for the plant is described as near *M. spicatum*, with all the leaves immersed and pectinate-pinnatisect.

#### GRAY HERBARIUM.

<sup>1</sup> Since the above went into type a beautiful sheet of *M. elatinoides* has been received from Prof. Morton E. Peck, collected in Des Chutes River, Oregon, July 27, 1914 (Peck, no. 5718).

<sup>2</sup> Fernald, Am. Jour. Bot. v. 231 (1918).



REPORTS ON THE FLORA OF THE BOSTON  
DISTRICT, — XXXI.

## CALLITRICHACEAE.

## CALLITRICHE.

**C. heterophylla** Pursh. Brooks, occasional; no reports from southern towns of district.

**C. palustris** L. Brooks and wet places, frequent throughout.

## ANACARDIACEAE.

## RHUS.

**R. copallina** L. Dry sandy and rocky soil, common throughout.

**R. COTINUS** L. Waste land, Beverly Farms (*F. T. Hubbard*, June 20, 1913); escaped, Medford (*L. L. Dame*, July, 1886).

**R. glabra** L. Dry soil, very common throughout. [*Forma lacinata* (Carr.) Robinson has been reported from Weston and Scituate; but no specimens have been preserved.]

**R. Toxicodendron** L. Fields, roadsides, woods and sea-beaches, common throughout.

**R. Toxicodendron** L., var. **radicans** (L.) Torr. On trees and walls, common.

[Beside the above variety there seem to be three other forms in our region: the slender prostrate vine of dry fields and river thickets; a bushy form with large dark green leaves which stands alone or forms hedges along stonewalls; and the thick-leaved, compact plants which grow on the sea-beaches above high water.]

**R. typhina** L. Dry soil, common throughout.

**R. Vernix** L. Swamps and low ground; common, but not always abundant.

## AQUIFOLIACEAE.

## ILEX.

**I. glabra** (L.) Gray. Swamps and moist woods; abundant at Magnolia swamp in Gloucester, also reported from Rockport and

Wenham; Blue Hills, Hingham and Cohasset southward (see RHODORA xvi., 163-5, 1914).

**I. laevigata** (Pursh) Gray. Wet soil, frequent near the coast, especially in Plymouth county, but not reported from western towns.

**I. laevigata** (Pursh) Gray, forma **Herveyi** Robinson. Long Pond, Tewksbury (*A. S. Pease*, Sept. 23, 1901). Specimen in herb. N. E. Botanical Club.

**I. opaca** Ait. Dogtown Commons, Rockport (*Frank Lufkin*, no date). Specimen in herb. Peabody Acad. of Sciences. This extreme northeastern station for the species is now extinct, according to J. H. Sears, RHODORA x. 43, 1908. Rather common in woods from Quincy, Holbrook, Hingham and Cohasset southward. See RHODORA xvi. 163-5, 1914.

**I. verticillata** (L.) Gray. Low ground, common throughout.

**I. verticillata** (L.) Gray, forma **chrysocarpa** Robinson. Georgetown (*Mrs. C. N. S. Horner*, no date); brackish river shore, Newburyport (*Donald White*, Sept. 13, 1913); W. Boxford (*M. H. Cole*, September, 1881); reported from Westford (*Miss E. F. Fletcher*, no date).

**I. verticillata** (L.) Gray, var. **padifolia** (Willd.) T. & G. Occasional.

**I. verticillata** (L.) Gray, var. **tenuifolia** (Torr.) Wats. Amesbury, Ipswich, Cohasset, Marshfield.

## NEMOPANTHUS.

**N. mucronata** (L.) Trel. Swamps and wet woods, well distributed throughout.

## CELASTRACEAE.

### CELASTRUS.

**C. scandens** L. Woods and thickets, rather common throughout.

### EVONYMUS.

**E. ATROPURPUREUS** Jacq. Persistent or sporadic at Salem and Milton.



## STAPHYLEACEAE.

## STAPHYLEA.

**S. trifolia** L. Needham (*T. O. Fuller*, June 4, 1885; *E. & C. E. Faxon*, Aug. 16, 1891); "in woods at Weston," Bigelow, Fl. Bost. 121, 1824.

## ACERACEAE.

## ACER.

**A. NEGUNDO** L. Introduced from further west and frequently spreading.

**A. pennsylvanicum** L. Cold rich woods; frequent in Essex County; also at Medford, Concord, Groton, and Blue Hill Reservation.

**A. PLATANOIDES** L. A rare escape from cultivation.

**A. PSEUDO-PLATANUS** L. Casual escape at W. Medford and Dorchester.

**A. rubrum** L. Swamps and wet woods, very common throughout.

**A. rubrum** L., var. **tridens** Wood. One tree near Auburndale (*M. L. Fernald & A. Rehder*, May 17, 1904). See RHODORA ix. 116, 1907. Probably elsewhere in the district.

**A. saccharinum** L. Occasional by streams, especially in Essex County; introduced in many places.

**A. saccharum** Marsh. Rich woods; occasional in northern half of district and at Blue Hill Reservation and Hingham.

**A. spicatum** Lam. Newburyport (*Edw. Moulton*, no date). Specimen in herb. Peabody Acad. of Science.

## SAPINDACEAE.

## AESCULUS.

**A. HIPPOCASTANUM** L. Rarely spontaneous.

## CARDIOSPERMUM.

**C. HALICACABUM** L. Somerville (*C. E. Perkins*, September, 1878). Specimen in herb. N. E. Botanical Club.

## BALSAMINACEAE.

## IMPATIENS.

**I. biflora** Walt. Moist soil, very common throughout.

**I. biflora** Walt., forma **albiflora** (Rand & Redfield) Weatherby. Edge of pool, Billerica (*C. A. Weatherby*, Aug. 12, 1911). See RHODORA xix. 115, 1917.

## RHAMNACEAE.

## CEANOTHUS.

**C. americanus** L. Dry open woods, common throughout.

**C. ovatus** Desf. Dry rocky and sandy soil; Andover, near Haggett's Pond (*Mrs. Belle P. Gowing*, June 18, 1888; *A. S. Pease*, June 4, 1904; *M. L. Fernald*, June 17, 1911); N. Chelmsford (*Mrs. A. R. Spalding*, June 14, 1898); Lowell (*Mrs. F. P. Spalding*, June 20, 1896).

**C. ovatus** Desf., var. **pubescens** T. & G. Shadyside Grove, Andover (*M. L. Fernald*, June 17, 1911); abundant in dry sandy soil, Lynnfield (*M. L. Fernald*, June 16, 1917).

## RHAMNUS.

**R. CATHARTICA** L. Thickets and waste places, common.

**R. FRANGULA** L. Large colony in low ground near railway, Wakefield (*R. C. Bean*, June 13, 1915); several trees by stone wall, Concord (*Wm. Brewster*, June 27, 1918). See RHODORA xx. 204-5, 1918.

C. H. KNOWLTON } Committee on  
WALTER DEANE } Local Flora.

## DISCOVERY OF TRISETUM SPICATUM IN PENNSYLVANIA.

## HAROLD W. PRETZ.

It is only the collector that can fully appreciate the charm of field collecting with its varied experiences. Whatever else may be suggested by the circumstances surrounding the collection of *Trisetum spicatum* in Lehigh County, Pennsylvania, the writer is more than



ever convinced that it is a good rule to collect anything in the field that seems out of the ordinary.

On July 15, 1917, the writer and his companion Mr. Walter I. Mattern were on their way for a day's botanizing along the Blue Mountains when a sudden rain made it seem best to abandon this attractive trip. It was still raining lightly when it was decided that rather than return home a trip should be made on the tracks of the Lehigh Valley Railroad along the Lehigh River past a number of steep, shale slopes with outcropping masses of rock between Slatington and Treichler that on a number of occasions have furnished most entertaining and profitable botanizing. It was too wet to make it advisable, at least as far as comfort was concerned, to penetrate far into the water-soaked vegetation of the slopes, etc., so it was planned instead to give leisurely and thorough attention to the outcrops and such parts of the slope as were readily accessible from the tracks. The plan worked out successfully, for besides interesting general collections, there was discovered in this supposedly well known locality a small amount of *Woodsia ilvensis*, a rare fern in the county though known from four other stations, and *Dryopteris Dryopteris*, a still rarer fern previously collected only twice in the county.

It was in this same locality about a mile and three quarters south-east by south of Slatington while the writer was standing beside the tracks busy cleaning a plant for press that he chanced to see on the shale cliff beside him the dried stalks of a grass that he could not seem to recognize as anything he knew. A stroke or two with the botanical pick dislodged a small clump which dropped with a dull splash to the ground. Water-soaked, bedraggled and soiled by coal dirt it was certainly not an inviting specimen and the temptation to abandon it was strong. But then it was clearly unfamiliar so it was cleaned, put into press and taken along. Later when it turned up at the time the writer was determining his *Gramineae* of the season it looked little more inviting and was in such poor condition that no trouble was taken with it. It was merely sent along unnamed to the Academy of Natural Sciences in Philadelphia with the writer's usual contribution to the Philadelphia Botanical Club Herbarium for Mr. Bayard Long to identify. Mr. Long recognized it as *Trisetum spicatum* and, writing about it, suggested the future collection of better material. It was only then that the writer became aware of the importance of this plant.

On June 23d, 1918, another visit was made to this series of steep slopes. The outcrops and slopes were carefully scanned for *Trisetum spicatum* from the tracks without success until the place of the original collection was reached. Here the plant was found rather evenly distributed and quite abundant about the open outcrops of the rather short, steep part of the slope close to the tracks for perhaps the distance of a city block and between two moist springy places about the outcrops. The soil in which it grew was moist but that was because of the recent rain for the soil on the shelves where some grew was shallow and suggested normally dry soil. Some however did grow in the springy places or at least close to where moisture is the rule. It grew mostly on tiny shelves of the outcrops which are lower and less clifflike than some others of the series here and when growing on the tiny shelves but a few inches wide, or less in some cases, presented rather a striking appearance where it grew upright against the vertical face of the outcrop. Later in the season, on August 18, 1918, the entire distance of about five miles between Treichler and Slatington was covered and the outcrops viewed from the tracks but the grass was seen nowhere on them excepting at the original station.

Though found only within a limited area the plant is certainly well distributed and is apparently quite indigenous. It is hardly possible to say whether or not it grows or has grown on original outcrops. Some certainly now grows on outcrops close to the marks of the drills used in blasting out the railroad roadway many years ago but there are many original outcrops on these slopes, some of them adjacent to the tracks, that appear to have been little if at all disturbed. Often these outcrops adjacent to the railroad are so well occupied by a generally well balanced association of native plants that it may easily become a matter of speculation as to what may or may not have been original outcrops. *Tiarella cordifolia* has been collected as close to the tracks as the *Trisetum* surely no more than the distance of a city block or two away, and there are found on the slopes close by, as well as on those of the whole series between Slatington and Treichler, such species as *Acer pennsylvanicum*, *Acer spicatum*, *Cornus rugosa*, *Ilex monticola*, *Lonicera canadensis* and *Prunus pennsylvanica* — all of which are more normally a strong element in the association found in the higher mountains northward. *Sambucus racemosa* and *Cinna latifolia* are found on the next series of cliffs and steep slopes about a mile and a half further down the river and still other species might



be mentioned to show the high percentage of northern types found in the general association of this series of slopes which, paralleling as they do the course of the Lehigh river, face either north, northeast or northwest. It need not be surprising to find a plant of such a general northern range as *Trisetum spicatum* occurring with this type of association.

As far as the writer knows *Trisetum spicatum* has not previously been collected or reported as occurring between New York and North Carolina. Upon inquiry by Mr. Bayard Long, Prof. M. L. Fernald in a reply — kindly furnished to the writer by Mr. Long — has written, "*Trisetum spicatum*, var. *molle*<sup>1</sup> we do not have from Pennsylvania but here are the records from New York and from North Carolina; banks of Black River, Watertown, New York, *Crawe*, *William Boott*, et al.; Little Falls, Herkimer County, *A. Gray*; Roan Mt., No. Carolina, *Buckley*, *Scribner*. It must be somewhere along the way between the Mohawk Valley and North Carolina." In reply to an inquiry concerning any additional records of New York and southward that may have come to his attention, Prof. A. S. Hitchcock has kindly furnished the following records from the collections at Washington; Lyons Falls, Lewis Co., *Haberer* 3062; Jefferson Co., *Sartwell*; Ausable Chasm, *Knowlton* in 1883; Oneida Lake, Lenox, Madison Co., *Haberer* 3276; Trenton Falls, Herkimer Co., *Haberer* 1292 — all in New York. In reply to a similar inquiry of the New York Botanical Garden, Dr. J. K. Small has kindly furnished in addition to the first mentioned above the following records from the collections there; near Montgomery, Orange County, New York, *Wm. Crabtree*; Greece, Monroe County, New York, *Dr. Bradley*. The records thus made available through inquiry have shown no known stations for the species south of New York state excepting that of the North Carolina station.

It may be interesting to observe that all excepting one of the stations recorded for New York are scattered north of a line drawn centrally across the State at about 43° latitude and that this one exception, the station for Orange county, is quite well away from the rest and not greatly distant from the boundary of New Jersey. This Orange county, New York, station would seem to be more nearly

<sup>1</sup> The material collected by the writer is the plant Prof. Fernald (*RHODORA* 18: 195. 1916) regards as *Trisetum spicatum* var. *molle* which represents the most southern of the several varieties of *Trisetum spicatum* distinguished by him.

related naturally to the next nearest station northward at Salisbury, Connecticut<sup>1</sup> than to the other New York stations. These two stations together with that of the Lehigh county, Pennsylvania, station<sup>2</sup> occur approximately in the same relation to the hills of the Older Appalachian Mountain Ranges and Appalachian Valley, large physiographic features variously named locally, and would seem to suggest that, if a natural trend of distribution for the species southward from the region of its more general occurrence be sought, the plant may be found to extend away from, rather than along, the tops of the higher mountains. Though this is not usually the case with northern types extending southward along the mountains it would appear to agree very well with the general distribution which Prof. Fernald, in his revision of the species, has noted for *Trisetum spicatum* var. *molle* which he has shown is found "in more temperate areas of the Canadian and Transition regions." Information concerning the exact location of the plant at Roan Mountain, North Carolina, which physiographically may be considered as a part of the Older Appalachian Mountain Ranges, is not available but even should it occur with other northern plants known to grow on its summit at an elevation of 6313 feet it is only what may be expected of northern plants so far south. Since the plant through its discovery in Pennsylvania has been shown, as Prof. Fernald predicted, to be "somewhere along the way between the Mohawk Valley and North Carolina," may it not be still further suggested that future discoveries of the plant southward along the mountains may probably be found to occur along the Great Appalachian Valley or, especially southward, in close relation to the Older Appalachian Mountain Ranges.

#### ALLENTOWN, PENNSYLVANIA.

<sup>1</sup> Flora of the vicinity of New York, Norman Taylor, 1915.

<sup>2</sup> Collected July 15, 1917, no. 8910, on open shale outcrops of the Martinsburg formation along the Lehigh River in Lehigh County, Pennsylvania, at an elevation of about 260 feet and beside the tracks of the Lehigh Valley Railroad about 1½ miles southeast by south of Slatington station. June 23, 1918, no. 9390. Material of this second collection has been placed in the herbarium of the U. S. National Museum at Washington, D. C., in the Gray Herbarium, Harvard University, Cambridge, Massachusetts, and at the New York Botanical Garden, Bronx Park, New York City.





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